Notice of Allowability	Application No.	Applicant(s)	
	10/525,112	OZAWA, KAZUHIKO	
	Examiner	Art Unit	
	Jason R. Kurr	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *February 18, 2005*.

2. ☒ The allowed claim(s) is/are *1-10*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 2/18/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Allowable Subject Matter

Claims 1-10 are allowed. For the purposes of allowance, the numbering of the claims as presented in the preliminary amendment dated February 18, 2005 has not been changed.

The following is an examiner's statement of reasons for allowance:

The general concept of reducing wind noise in an audio system with multiple channels was known in the art at the time of the invention, as evidenced by Coney et al (US 6,859,420 B1) (see, for example, Abstract, fig.3). However, the examiner has not found prior art that teaches or suggests the modification of Coney to result in the invention as claimed in independent claims 1 and 6. Coney teaches a "weight update processor", (figure 3 #310); that controls the gain of each input channel to achieve a wind noise compensated output (col.3 ln.51-67, col.4 ln.1-15), whereas the present invention uses an "extracting means for extracting a frequency band component of a wind noise signal", to provide a noise signal which is ultimately subtracted from a desired selected channel to provide a wind noise compensated output. The general concept of spectrally subtracting a frequency component from a microphone signal to reduce abnormal output characteristics such as noise deduced from wind was known in the art at the time of the invention, as evidenced by Suzuki (US 4,420,655)(figure 1, col.5 ln.28-59). However, the examiner has not found any hint of motivation to combine the multi-channel wind noise reducing system of Coney with the spectral subtraction system of Suzuki to arrive at the claim limitations of the present invention. Specifically,

the examiner has not found, "first adder means for adding all of audio signals of N-1 number of audio channels, excluding one audio channel which is selected from the N number of audio channels" for the purpose of "extracting a frequency band component of a wind noise signal with respect to each of the audio signals of the N number of audio channels" in order to subtract from the excluded signal, a gain modified frequency band component that represents a sum of the signals on the N-1 channels. Other prior art has been cited herein regarding reduction of noise from microphone signals. However, the other prior art of record also fails to teach or provide suggestion to arrive the combination of the elements and steps presented in the independent claims, again when said elements or steps are collectively considered in regards to each claim. For at least the reasons listed above, the dependent claims are also allowed in view of their respective dependencies upon the independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Coney et al (US 6,859,420 B1) discloses a system and method for adaptive wind noise rejection.

Suzuki (US 4,420,655) discloses a circuit to compensate for deficit output characteristics of a microphone

Sasaki et al (US 5,917,921) discloses noise reducing microphone apparatus.

Ono (US 5,982,906) discloses a noise suppressing transmitter and method.

Kellermann (US 5,602,962) discloses a mobile radio set comprising a speech processing arrangement.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Kurr whose telephone number is (571) 272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-8300. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000. JK

JK

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
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